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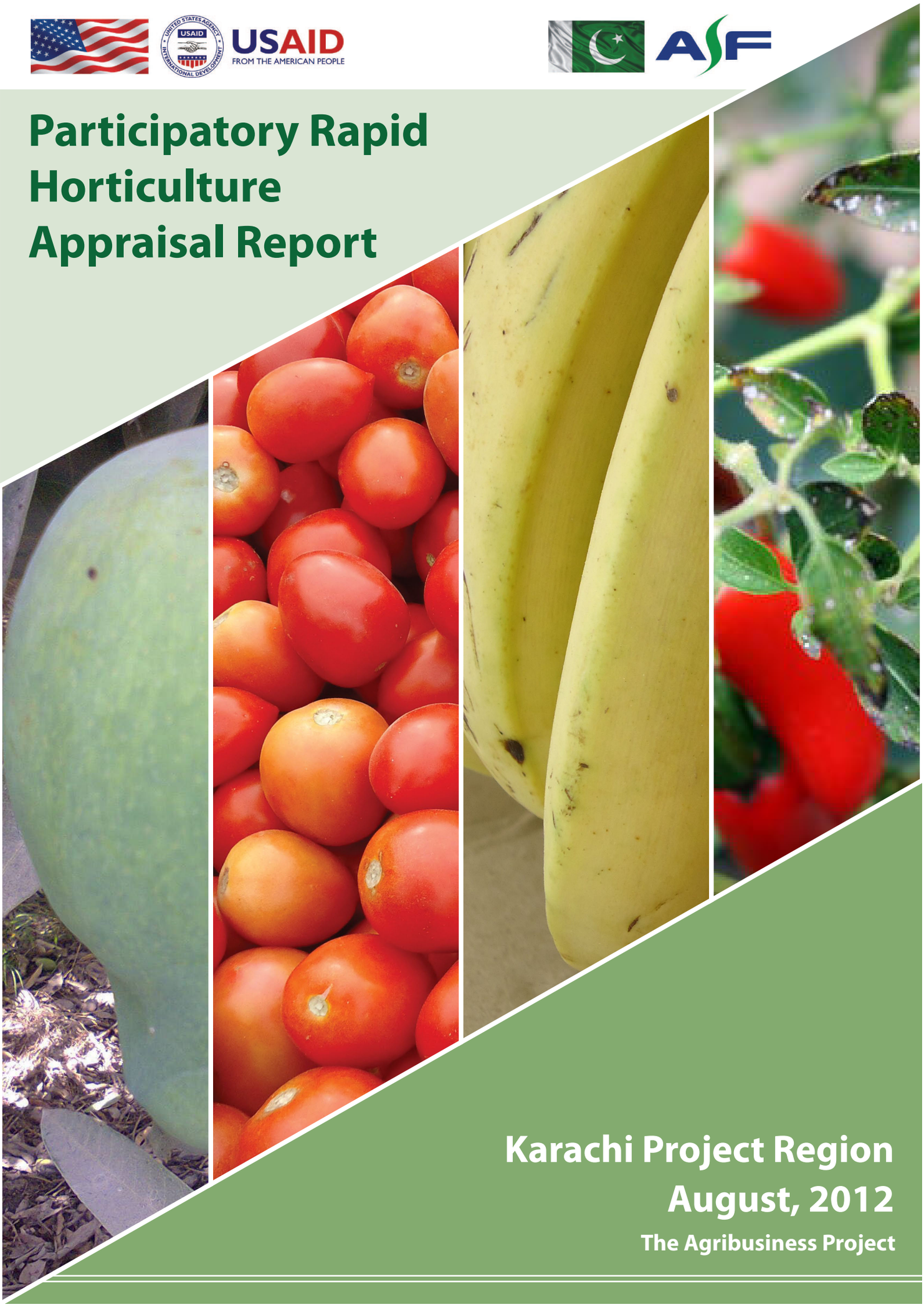
# Participatory Rapid Horticulture Appraisal Report



## Karachi Project Region
## August, 2012

**The Agribusiness Project**

# Abbreviations

| | |
|---|---|
| ASF | Agribusiness Support Fund |
| FGD | Focused Group Discussion |
| KPR | Karachi Project Region |
| PRHA/LA | Participatory Rapid Horticulture Appraisal/Livestock Appraisal |
| TAP | The Agribusiness Project |
| USAID | United State Agency for International Devlopment |
| VC | Value Chain |

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# Executive Summary

The Agribusiness Project (TAP) by USAID is being implemented by Agribusiness Support Fund (ASF) in calloboration with international and national partner organazations. The overall goal of the Project is to support improved conditions for broad-based economic growth, create employment opportunities and contribute to poverty alleviation through increase in competitiveness of horticulture and livestock value chains in partnership with all stakeholders. During the first year of this five-year (2011-16) project, a preparatory program was undertaken to gauge the potential of the sub-sector and to prioritize value chains in the context of various project regions including the project region of Karachi. Findings from Participatory Rapid Horticulture Appraisal (PRHA) will enable the project to identify and prioritize; horticulture and livestock value chains, opportunities, constraints; and state of the business development services to provide required basis for focusing project interventions. Karachi Project Region comprises of 14 districts and stretches from coastal belt to central Sindh.

Within the framework of the cluster and value chain approach, a two-prong approach was adopted, first preparation for PRHA exercise in the field and second to collect secondary data and develop appropriate tools for quantification of factors so that it can be measured on a scale for ranking/prioritization. This report pertains to work completed based on both secondary data and primary appraisals of horticulture sub-sector.

The PRHA methodology provides for probing, analysis, and validation of information as they unfold during the field work. Seven factors were applied in the prioritization of value chain. These include; (i)extent of employment generation; (ii) commercial worth; (iii) percentage of small farmers associated, (iv) women involvement; (v) households associated with the value chains; (vi) understanding growth potential; and, (vii) vulnerability of the concerned value chains. Covering 50% of the districts, the exercise was undertaken in the randomly selected settlement/villages within each cluster/region. Each focus group consisted of 10-15 stakeholders, a representative sample of sub-sector. In each district, 2-3 FGDs were carried out. The analysis of secondary data is based on the district-wise data on area and production for last ten years which was collected and tabulated as time series data.

Based on the analysis of both secondary and primary information, it can be concluded that banana, mango, onion and chilies are the priority value chains in the region of Karachi. Banana production in Sindh contributes 70 percent of the country's total banana production. The growth rate of banana in Karachi region over the past five years is 14.29%. It includes 9% women involvement and provides livelihood to 12% small farmers because of its requirement of more land for cultivation. It has high potential to be marketed at the national and international levels, provided quality seeds and export marketing is taken care of. A number of opportunities exist, in the region, which can catalyze the development of the sub-sector. Of them the most important are:

- Availability of cold storages, pack houses and market infrastructure
- Increasing demand in national market
- Processing technologies
- Fruit processing and product diversity, bi products processing
- Availability of improved packaging in the market
- Availability of high yielding new varieties of fruit (good quality seeds)
- Access to international market

These opportunities can be further reinforced through the project interventions leveraged by primary-sector investments provided that a holistic and integrated approach is applied. Some of the constraints hampering the development of fruit sub-sector are:

- Inadequate support from Agriculture extension
- Lack of effective coordination among different stakeholders
- Scarcity of water for irrigation and lesser means of watering crops/orchids
- Use of poor packaging

- No proper storage and packing/ grading facilities, particularly at the local level
- Unavailability of good quality seeds and new varieties
- Limited information and skills about improved agricultural practices, marketing, and technical facilities
- Processing/ by products units unavailable
- High cost of transportation
- Difficulty in access to local retail market / super stores/ modern chains

Most constraints are cross-cutting and generic in nature which provide information on the overall sub-sector and some of the constraints can be considered as opportunities for investment by the project provided that willingness in the private sector for investment exists. In general most of the varieties of vegetables are grown in the districts of Karachi Region. Vegetables are mostly grown for commercial purposes as well as domestic utilization by producers. While onion provides greater employment opportunities, chilies employees a considerably higher number of women. Major priority opportunities are represented by:

- Availability of cold storages
- Tunnel farming for off-season vegetables
- Drying and dehydration
- Drip irrigation and other irrigation methods to address scarcity of water resource
- Improved/quality seeds
- Improved packaging and grading units
- Nurseries, to provide services and inputs
- Access to the international market
- Access to local retail stores and modern super markets
- Training and certification facilities By products these opportunities are cross-cutting and investment in these will generate employment and income generation opportunities.

Some major constraints faced by the vegetable sub-sector are:

- Scarcity of water resources
- Limited access to international markets
- High price of agriculture inputs
- Unavailability of products specific fertilizers
- Non availability of processing and by products units
- Market agent's monopoly in buying rates
- No proper packing sheds
- No proper storage facilities
- Poor packaging
- Limited availability of quality seeds
- Unavailability of modern drying and processing techniques
- Poor linkages with national markets
- High cost of transportation
- Lack of awareness and facilities about improved farming practices

The high ranking constraints provide opportunities for investment which will not only generate income and employment but also act as drivers for the wider development of the sub-sector. However the key consideration for intervention in addressing the constraint should be private sector investors willing to partner with the project. The availability and quality of business development services is important for the overall development of any sub-sector. The situation with regards to services provision for both fruit and vegetables was appraised together with focus groups. In most cases the linkages between service providers and users were termed as weak to medium. To be effective in enhancing profitability of fruit growers, there is a need to build confidence and develop strong linkages of agribusiness with service providers.

Marketing of fruits and vegetables varies from commodity to commodity; however, generally, most of the produce is channeled to local and country markets. Some of the national markets relevant for the regional producers include Karachi SabzeeMandi, Hyderabad, Sangher market, TandoAllahyar market, Mirpurkhas market. Demand for fruits and vegetables does exist in the international markets (particularly Gulf countries) but that needs to be tapped after overcoming several constraints related to export. Marketing of fruits and vegetables is characterized by the presence of numerous intermediaries performing at various distribution stages, thus adding to marketing costs and directly affecting the price received by the farmer and paid by the consumer. In general, intermediaries dominate the system and there is little direct market participation of the farmers, particularly small farmers. Lack of market information system has increased the complexity of the marketing system on one hand and brought less return to the farmers on the other. Export endeavors need to be supported by a "grow-for-export" strategy.

# Introduction

The Agribusiness Project (TAP) by USAID is being implemented by Agribusiness Support Fund (ASF) in calloboration with international and national partner organazations. The overall goal of the Project is to support improved conditions for broad-based economic growth, create employment opportunities and contribute to poverty alleviation through increase in competitiveness of horticulture and livestock value chains in partnership with all stakeholders. Specific objectives of the project are to; (i) strengthen the capacity in horticulture and livestock value chains to increase sales to domestic and foreign markets; (ii) strengthen the capacity of smallholders and farmer enterprises to operate autonomously and effectively; and, (iii) increase agriculture efficiency and productivity through adoption of new farming techniques and technological innovation among targeted beneficiaries.

During the first year of this five-year project, a preparatory program has been launched to gauge the potential of the sub-sector and to prioritize value chains in the context of various project regions. The project planned and conducted Participatory Rapid Horticulture Appraisal (PRHA) in all the project regions throughout Pakistan. Findings from PRHA will enable the project to identify and prioritize; horticulture value chains, opportunities, constraint; and state of the business development services to provide required basis for focusing project interventions.

The reports articulate for each region separately to enable better targeting and focusing project interventions. This report covers the project region of Karachi covering Southern part of the Sindh province. Within the framework of the cluster and value chain approach, a two-prong approach was adopted, first preparation for PRHA exercise in the field and second to collect secondary data and develop appropriate tools for quantification of factors so that it can be measured on a scale for ranking/prioritization. This report pertains to work completed based on both secondary data and primary appraisals.

# The Region

Sindh is the second largest province of Pakistan on the basis of population and also its contribution to agricultural progress of country. Historically horticulture, fruits in general and vegetables in particular, have had significant potential in the province of Sindh where this sub-sector represent a major potential for economic growth and development. The Karachi region under the project consists of 14 districts and stretches from coastal belt to central Sindh. This project region holds comparative advantage in producing tropical and sub-tropical crops.

Based on the analysis of both secondary and primary information, it can be concluded that banana, mango, onion and chilies are the priority value chains in the region of Karachi. The key clusters for the priority sub-sectors, with their production and share percentage in the province and country, are given in Table i and ii respectively.

While mango, banana and chilies are the major horticultural crops, Sindh produces 73% banana, 48% mangoes, and 88% of the chilies grown in the country. Similarly Karachi region contributes 65% to banana, 34% to mangoes and 80% to chillies grown across the country.

Vegetables and fruits consumption of around 20 million population of Karachi is catered through supply from Sindh interior, Balochistan and areas of Punjab province bordering Sindh. The total share of Karachi Project Region in national vegetable production has also increased, over the years.

Table (i)District wise Area and Production of Mango during 2008-09

| Districts | Areas(Hectares) | Production (Tons) |
|---|---|---|
| Khairpur | 4,550 | 32,111 |
| TandoAllhyar | 7,415 | 48,740 |
| Matyari | 4,644 | 33,509 |
| Sanghar | 7,922 | 64,209 |
| MirpurKhas | 9,586 | 52,682 |
| Hyderabad | 5,586 | 41,411 |

Table (ii) District wise Area and Production of Banana in Sindh during 2008-09

| Districts | Areas(Hectares) | Production (Tons) |
|---|---|---|
| Khairpur | 9,232 | 36,646 |
| Thatta | 6,928 | 24,721 |
| Matyari | 3,994 | 13,936 |
| ShaheedBenzairabad | 3,318 | 15,021 |

[1] Lasbela, Karachi, Thatta, Badin, TandoMuhammad Khan, Hyderabad, Jamshoro, Matiari, Tando Allah yar, MirpurKhas, Tharparker, UmerKot, Sanghar, Shaeed Banzirabad

As per the recent statistics, Karachi region's share in overall world's fruit market for banana and mango makes 0.03% and 11% respectively whereas banana crop has witnessed growth in past 5 years by 6.15% and mango has received a negative growth of -13.5% due to climatic changes and post production losses occurring in last 5 years. (source: FAO)

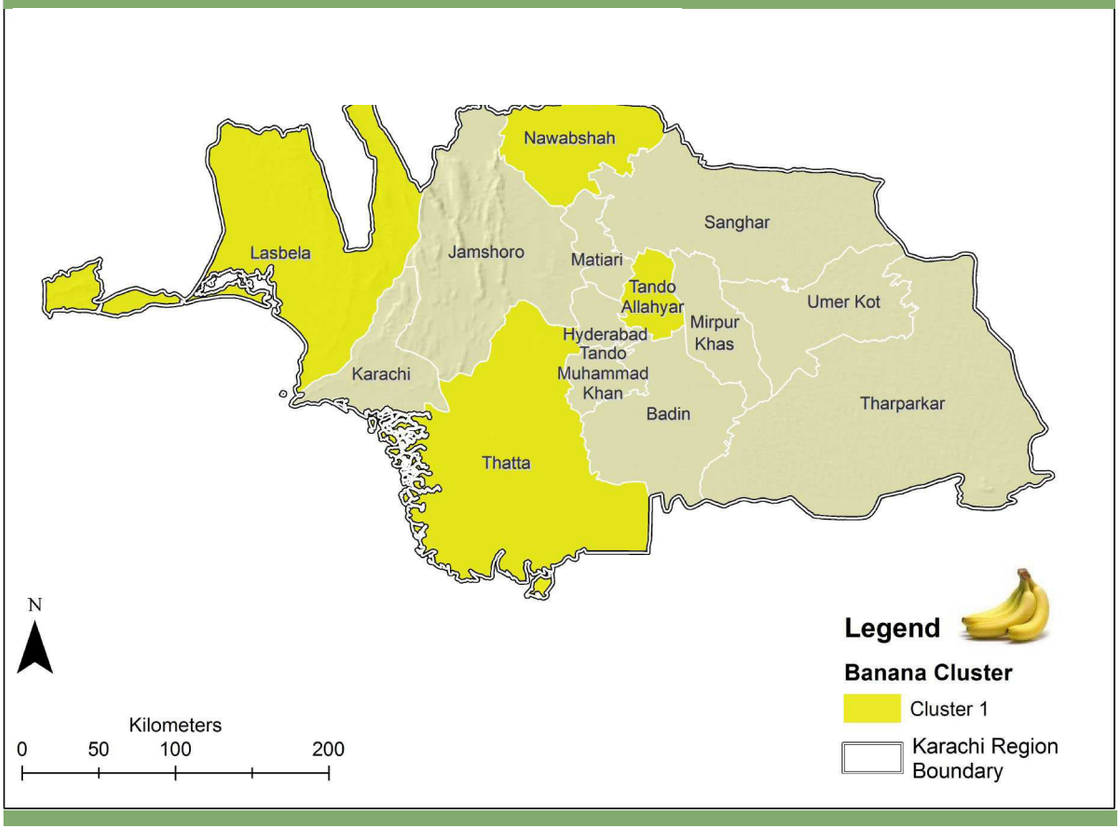
Positive growth in area of vegetables in Pakistan has been noted with higher growth of area in Sindh province, while the vegetable production depicted a growth rate of 1.3%. The growth rate of vegetable production and corresponding comparisons of area clearly indicated that the vegetable yields in Sindh had remained and grown higher than rest of the provinces of Pakistan. With reference to the prioritized value chains in vegetables, the growth rate for chillies has grown to 19.43% whereas onion has seen a negative rate of -17%. (Source: FAO)

Table 1: Prioritized value chains of based on Secondary and Primary Data

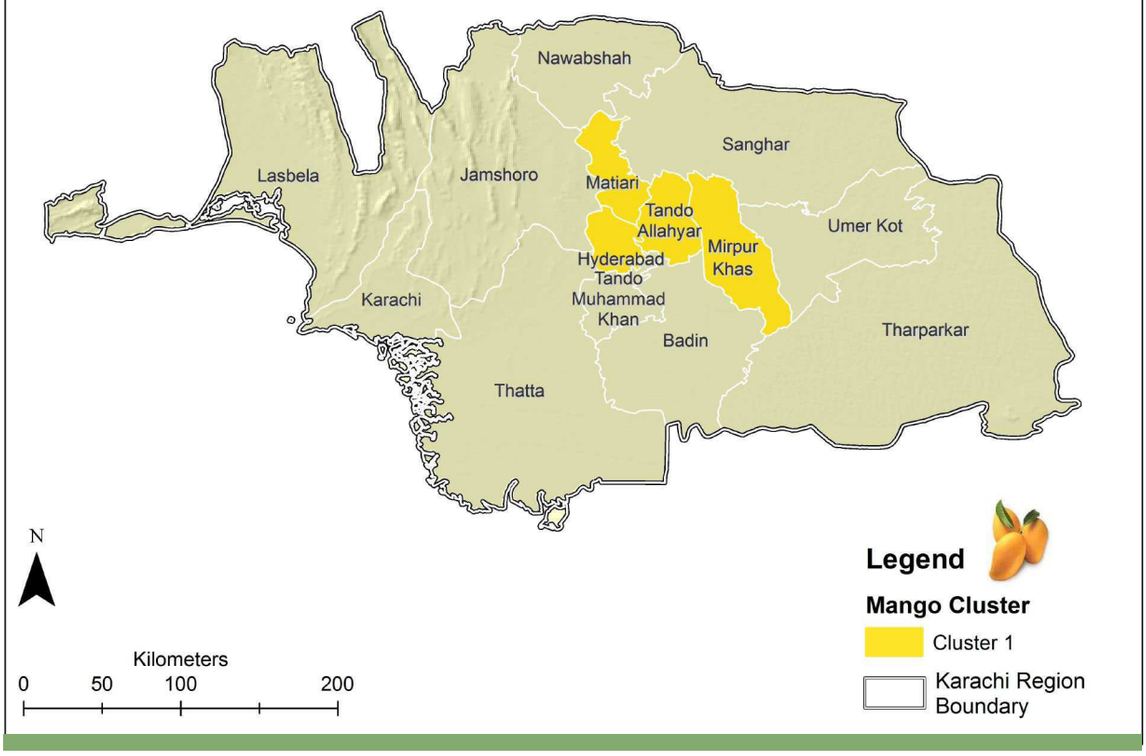
| S.# | Priority Value Chains | Clusters (Mention Districts) | Total Production(Tons) | Percentage Share of the Province | Percentage Share of the Country |
|---|---|---|---|---|---|
| 1 | Banana | Thatta, Tandojam, Tando Allah Yar, Shaeed Banzirabad, Lasbe | 50,079 | 73.00% | 65.00% |
| 2 | Mango | MirpurKhas, Tandojam, Tando Allah Yar, Hyderabad, Matiari | 176,342 | 44.00% | 34.00% |
| 3 | Chillies | Mirpurkhas, UmerKot, Sanghar | 172,171 | 88.00% | 80.00% |
| 4 | Onion | Nawab Shah, Hyderabad, Tando Allah Yar, MirpurKhas | 210,103 | 32.00% | 12.00% |

(Source: Ministry of Food and Agriculture, GoP, 2008)

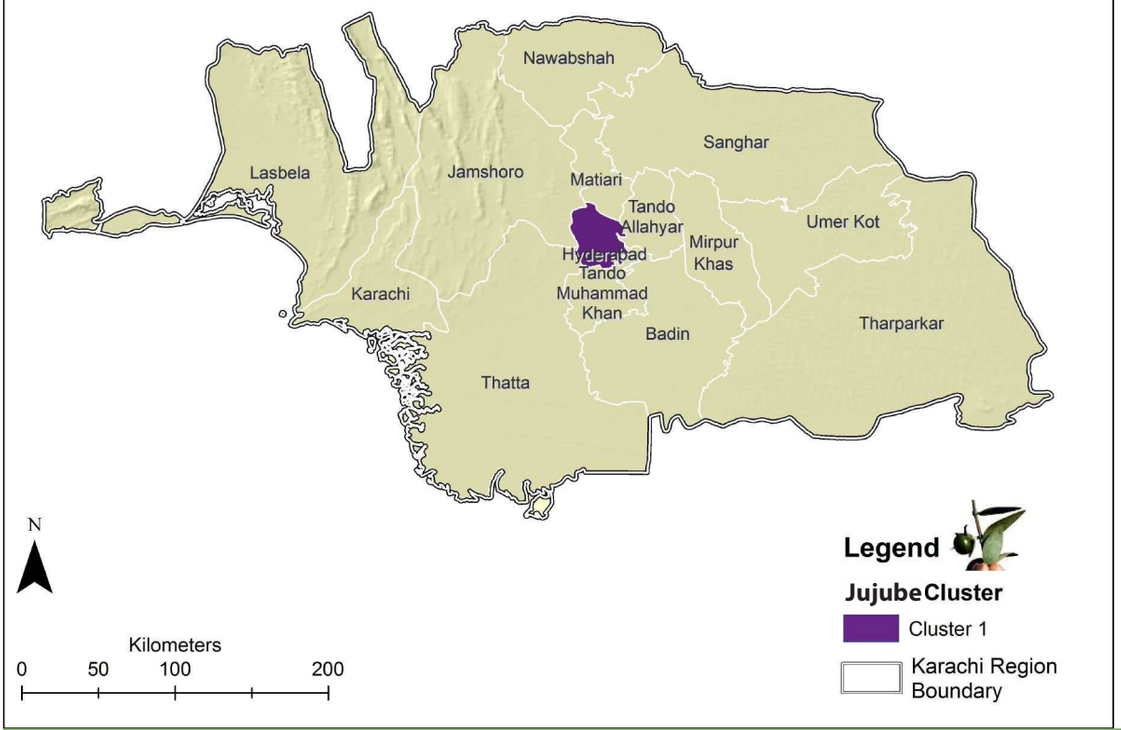
## Banana Cluster



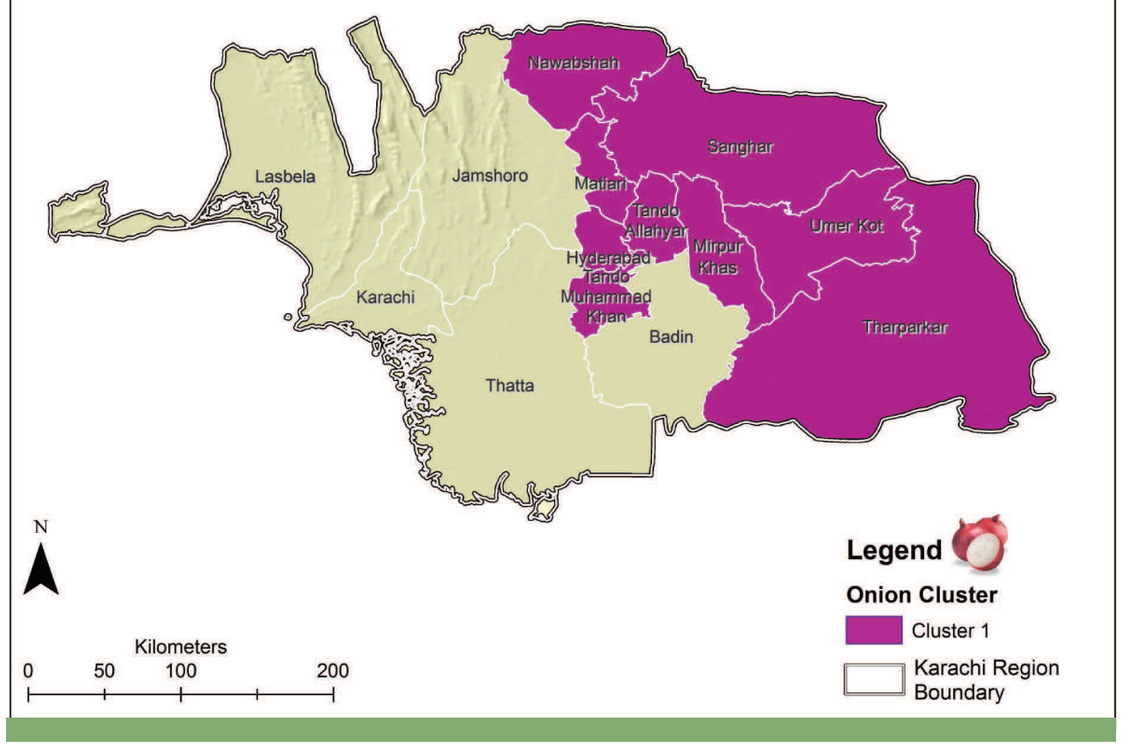

## Mango Cluster



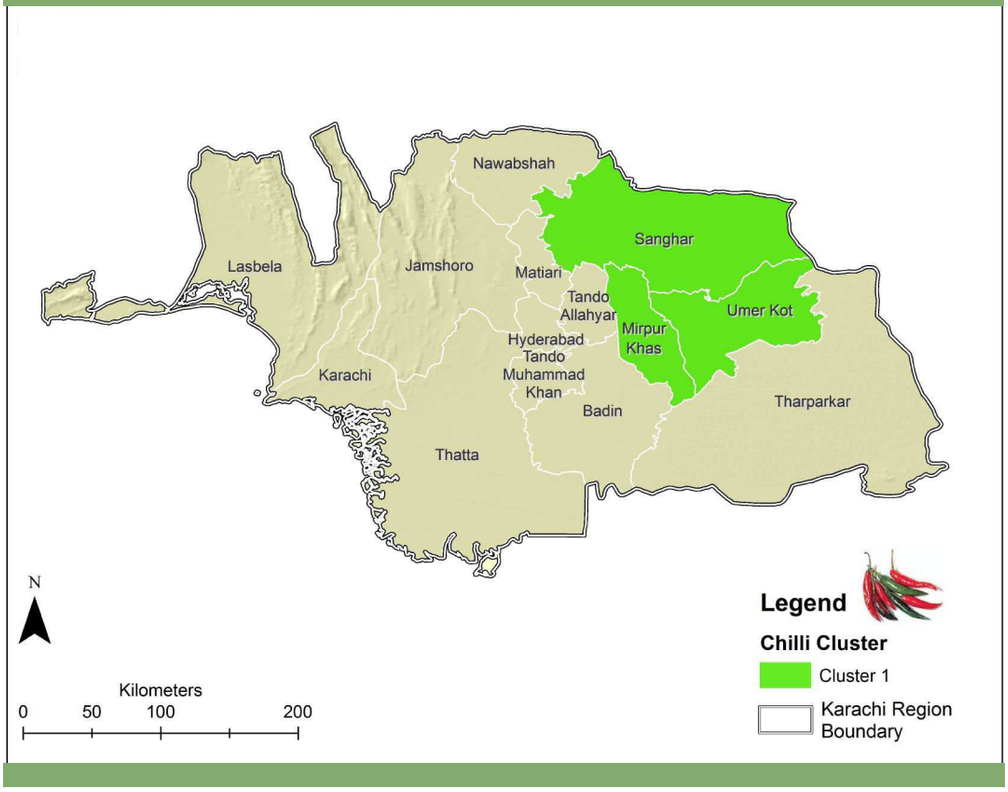
## Jujube Cluster




## Onion Clusters



## Chilli Cluster



# Methodology and Approach

The Participatory Rapid Horticultural Appraisal (PRHA) is one of the effective methodologies for exploring and gathering topical and focused information about a sub-sector system. Its advantages are to gather and analyse market information in a relatively short period of time employing less resource. The methodology provides for probing, analysis, and validation of information as they unfold during the field work.

The PRHA exercise allowed for a rapid assessment of the sub-sector, including prioritization of value chains, identifying and prioritizing opportunities and relevant constraints impeding the realization of the opportunities as well as an assessment of the current state of the services provided by various facilitators to agribusinesses in the region. Further, linkages of the sub-sectors with local and national markets were also explored. The appraisal was conducted with a view to prepare the stage for focusing project intervention as well as for the project baseline and value chains benchmarking studies. The PRHA results will enable the TAP to prioritize value chains (validating the cluster approach), set benchmarks, and support establishment of a database to generate primary data on key indicators to be maintained and updated during the course of project implementation and afterwards supporting the planning, monitoring, evaluation and communication functions of the project.

The analysis of secondary data is based on the district-wise data on area and production for last ten years which was collected and tabulated as time series data. From these data, subset for Karachi Region was extracted which covers 12 tehsils from 9 major districts of Sindh region. . The major factors considered as important aspect for prioritization included; (i) the growth % rates share of commodity in total production; (ii) Karachi region share in Sindh; (iii) productivity gap; (iv) employment intensity; and, (v) export potential based on incentive structure.

The primary appraisals were based on quantification of factors so that it can be measured on a scale for ranking/prioritization. Seven factors were applied in the appraisal included; (i)extent of employment generation; (ii) commercial worth; (iii) percentage of small farmers associated, (iv) women involvement; (v) households associated with the value chains; (vi) understanding growth potential; and, (vii) vulnerability of the concerned value chains.

The appraisal was carried out by the project region with the assistance of the project M&E/C unit and consultants retained to guide the team throughout the implementation of the appraisals. Covering 50% of the districts, the exercise was undertaken in the randomly selected settlement/villages within each cluster/region. Each focus group consisted of 10-15 stakeholders, a representative sample of sub-sector. In each district, 2 FGDs were carried out. The analysis of the information was consolidated at the project region level to draw conclusion and inferences.

# Appraisal of Fruit Sub-Sectors

**Prioritization of value chains in fruit sub-sector**

The comparative appraisal is based on the composite index calculated based on the seven factors used in the grid analysis. The analysis of fruits places banana as the priority followed by mango, guava and cheeku in the region.

Banana production in Sindh contributes 65 percent of the country's total banana production. It is grown in TandoAllahyar, Badin, Shaeed Banzirabad, MirpurKhas, Tando Muhammad Khan, and Matyari. The FGDs conducted show that growth rate of banana over the past five years is highest among the value chains i.e. 14.29%; its growth is rising in different areas of TandoAllahyar and Shaeed Banzirabad. However Banana offers only 9% women involvement and provides livelihood to 12% small farmers because of its requirement of more land for cultivation. Losses in banana have been very low, observed to be 1.57%, which can be minimized using improved management practices, better fertilizers, and better irrigation systems. It has high potential to be marketed at the national and international levels, provided quality seeds and export marketing is taken care of. The value chain wise analysis can be seen in Table 02 below.

On second priority amongst fruits value chains in Karachi region is the king of fruits mango. Sindh province produces 371,000 tons of mangoes and it is grown in Mirpurkhas, Sindhrhi (Sanghar), Tando M Khan, Shaeed Banzirabad. Sindh mangoes, especially Sindhri variety is in higher demand in the international market specially Dubai, UK, USA, Singapore, etc. Although its growth has gone down by 16% in last 5 years, mango is contributing to the livelihoods of almost 30% households. It is grown by 10% small farmers. There is a great potential of export of Mango, if the infrastructure for cooling, grading, vapour heat treatment and grading, vapour heat treatment and packing are developed.

Table 2 : Grid analysis for prioritization of fruits

| **Weights** | **3** | **2** | **1** | **2** | **2** | **1** | **1** | |
|---|---|---|---|---|---|---|---|---|
| Value Chain | %Employment | %Commercialization | %Small Farmers Involvement | %Women Involved | %Growth | %Losses | %Involvement (HH) | Prioritized Index |
| Banana | 39.29 | 99.57 | 12.00 | 9.00 | 14.29 | 1.57 | 41.00 | 4.18 |
| Mango | 35.83 | 97.00 | 10.43 | 12.14 | -16.36 | 10.86 | 30.14 | 3.45 |
| Guava | 20.00 | 97.50 | 25.00 | 0.00 | 5.00 | 2.50 | 17.50 | 3.10 |
| Cheeku | 14.00 | 96.33 | 37.50 | 0.00 | 6.67 | 2.33 | 12.67 | 3.01 |

(Source: Federal Bureau of Statistics)

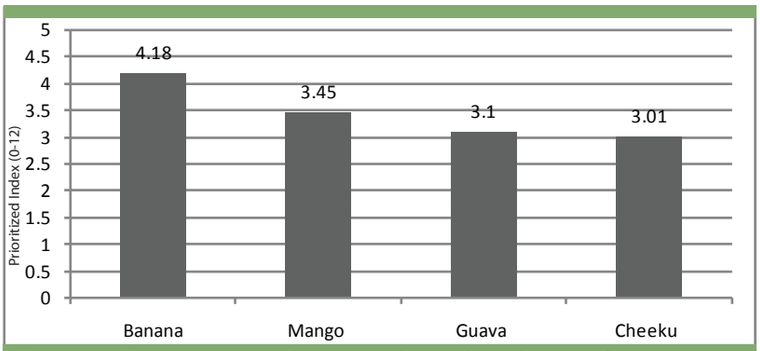



Figure 1: Prioritization of commodity value chain in furits

Guava is third on the priority ranking index. Generating 20% of employment, it has more number of small farmers and very low level of losses (only 2.5%). However women are not involved in its production process and the growth is also just 5% in last 5 years. It is usually grown in MirpurKhas, Shaeed Banzirabad and Matyari region.Pakistan's guava production increased to 552,000 tons in the year 2008; an annual growth rate of 6.9%. In Sindh, an approximate total cultivated area for guava is 24,000 acres, producing 70,000 tons of fruit. The total export of guava from Sindh in 2007-2008 was PKR 13.8 Million.

The International market for fresh guavas is on surge with more trade currently being carried on processed guava products like juices and nectars, jam and jellies, fruit paste, canned whole and halves in syrup.

Next on the priority index is cheeku. It generates about 14% of the employment in the region with 37% farmers as small farmers. Its production area is extended to the districts of MirpurKhas, MirpurSakro, Matyari regions. Table 3 shows the priority value chains on the basis of secondary data.

Table 3: Priority value chains in fruits based on secondary analysis

| Fruits | Percentage | Scores | Ranking |
|---|---|---|---|
| Mango | 46% | 1 | **Highest** |
| Banana | 42% | 2 | |
| Guava | 36% | 6 | **Medium** |
| Bair | 31% | 7 | |
| Cheeku | 24% | 8 | **Low** |

Based on the analysis of both secondary and primary information, it can be concluded that mango, banana and guava are the priority value chains in the region of Karachi. The key clusters for the priority products are given below in Table 4 below.

Table 4: Possible production clusters of fruit value chains

| Priority sub-sectors | Clusters/Districts | Total Production of the Cluster(Tons) | % share in the Province | % share in the Country |
|---|---|---|---|---|
| **Banana** | TandoAllahyar, TandoSoomro, Matyari | 13936 | 73% | 65% |
| | Thatta and Badin | 24721 | | |
| | Shaeed Banzirabad, Sakr Qazi Ahmed | 15021 | | |
| **Mango** | TandoAllahyar | 48740 | 44% | 34% |
| | Matyari | 33509 | | |
| | Sanghar | 64209 | | |
| | MirpurKhas | 52682 | | |
| | Hyderabad | 52682 | | |
| **Guava** | Matyari, Hyderabad, MPK, Shaeed Banzirabad | 64,186 | 7.22% | 5% |
| **Cheeku** | MirpurKhas | 4286 | 83% | 68.92% |
| | Karachi, Thatta and Badin | | | |

# Prioritized Opportunities

For prioritization of opportunities, paired ranking tool was used. Table 5 below provides self-explanatory list of opportunities as prioritized/ranked by the participants during the FGDs.

The study reveals that a number of opportunities exist in the region, which can catalyse on the development of the sub-sector. The most important are the access to international market, fruit processing and product diversity, availability of new and high yielding varieties and pack houses, cold chains etc. These opportunities can be further reinforced through the project interventions leveraged by primary-sector investments provided that a holistic and integrated approach is applied.

Table 5: Prioritized Opportunities

| Priority Opportunities | Rank |
|---|---|
| **Access to international market** | 6 |
| **Fruit processing and product diversity, bi products processing** | 5 |
| **Availability of high yielding new varieties of fruit (good quality seeds)** | 5 |
| **Availability of cold storages, pack houses and market infrastructure** | 3 |
| **Availability of improved packaging in the market** | 3 |
| **Increasing demand in national market** | 2 |
| **Processing technologies** | 2 |

Source: PRHA field exercise August, 2012

# Prioritized Constraints

Constraints to fruit value chains were also identified and prioritized by participants during the FGDs on the basis of their potential as High, Medium or Low. The key constraints hampering the development of fruit subsector are listed in Table 6 below.

The major and most significant constraints to be addressed on priority basis are (but not limited to) Scarcity of water for irrigation, difficulty in access to local retail market, unavailability of god quality seeds and new varieties, no proper packaging and grading units etc.

Table 6 : Priority Constraints

| Priority Constraints | Intensity |
|---|---|
| No support from Agriculture extension | High |
| Scarcity of water for irrigation and lesser means of watering crops/orchids | High |
| No proper storage and packing/ grading facilities, particularly at the local level | High |
| Unavailability of good quality seeds and new varieties | High |
| Difficulty in access to local retail market / super stores/ modern chains | High |
| Lack of effective coordination among different stakeholders | Medium |
| Use of poor packaging | Medium |
| Limited information and skills about improved agricultural practices, marketing, and technical facilities. | Medium |
| Processing/ by products units unavailable | Medium |
| High cost of transportation | Medium |

Source: PRHA field exercise August, 2012

# Appraisal of Vegetables Sub-Sectors

**Prioritization of value chains**

In general most of the varieties of vegetables are grown in the districts of Karachi region. Vegetables are mostly grown for commercial purposes as well as domestic utilization by producers. While tomato and onion lead in providing more employment opportunities, chillies and bitter gourd recorded considerably higher women involvement as compared to other top ranking vegetables. Involvement of small scale farmers is highest in tomato and okra (lady finger). Tomato leads the priority ranking in terms of growth rate observed due to increasing demand in international markets. As per vulnerability, comparatively more losses are recorded in okra, chillies and tomato. Figure 2 shows the prioritized vegetables in the Karachi Project Region.

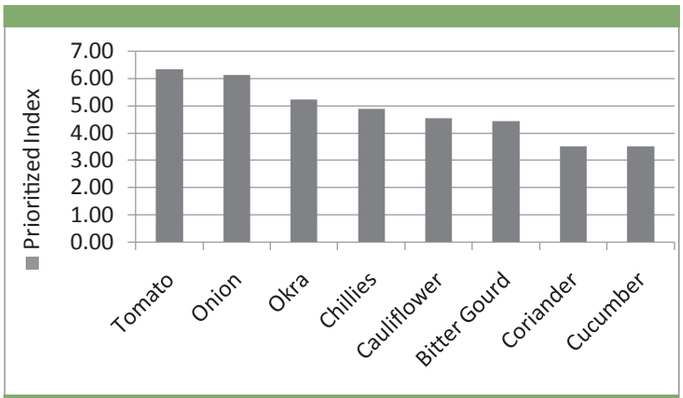



Figure 2: Prioritization of commodity value chain
Source: PRHA field exercise August, 2012

The secondary data at Table 7 below reveals that the share of tomato and okra in national and provincial production is quite high and indicates the significance of these vegetables and highlights the need to provide support to improve their competitiveness.

The analysis of secondary data also places tomato, okra, onions, and green chillies the priority vegetable crops in Karachi region having the productive potential and scale/size of economies as well potential for enhancing productivity and profitability. Other crops may also have the potential such as off-season seasonal vegetables production which may be cultivated at lower scales but are important for higher income potential these entail due to higher prices in the market during off-season.

According to Pakistan Agricultural Research Council, in 2005 onion production was 1765 tonnes, depicting it as one of the crops that have grown tremendously in past 5-7 years. As per the FGDs also, the growth rate of onion is more than 27% in last 5 years. Hence it is evident that this value chain needs to be prioritized especially with reference to the provision of technical innovation like dryers etc. Table 8 below shows the possible production clusters of vegetables value chains and their production share at the province and the country level.

Table 7: Prioritization of value chains based on Secondary data

| Vegetables | Percentage | Scores | Ranking |
|---|---|---|---|
| Tomato | 41% | 1 | High |
| Okra | 29% | 2 | |
| Onion | 19% | 3 | |
| Chilies | 9% | 4 | Low |

Table 8 : Possible production clusters of vegetables

| Priority sub-sectors | Clusters/Districts | Total Production of the Cluster(Tons) | Percent share in the Province | Percent share in the Country |
|---|---|---|---|---|
| Tomato | Badin, MirpurKhas, Gaddap, Thatta, Tando M Khan, Sangharh | 60,535 | 41% | 29% |
| Onion | Nawabshah, Sangharh, Thar Parker, MirpurKhas, Umarkot, Matyari, Tando M Khan and Karachi | 54,450 | 32% | 12% |
| Okra | Nawabshah, MirpurKhas, Thatta, Matyari | 22,112 | 29% | 15% |
| Chillies | Badin, Umarkot, Matyari, Sangharh, TandoAllahyar | 53700 | 88% | 80% |

Source: Pakistan Bureau of Statistics

Besides the above given table, according to the details given on Sindh Board of Investment's website, Sindh produces 10 thousand tons of red chillies with extra hot ratings. Dry chillies are being exported to Dubai, Saudi Arabia, Canada, USA, UK and other countries.

# Prioritized Opportunities

Opportunities for vegetables related value chains were scored and ranked during the exercise. The major opportunities identified by the farmers during the PRHA activity can be seen in the Table 9 below.

The appraisal reveals that major priority opportunities are represented by the availability of cold storage, provision of modern technologies to grow off season vegetables, improved irrigation systems, processing units for by products etc. These opportunities are cross-cutting and investment in these will generate employment and income generation opportunities.

Table 9: Priority Opportunities

| Priority opportunities | Rank |
|---|---|
| Availability of cold storages | 1 |
| Tunnel farming for off season vegetables | 1 |
| Drip irrigation and other irrigation methods to address scarcity of water resource. | 1 |
| Access to the international market | 1 |
| By products such as tomato puree and dried onions | 1 |
| Drying and dehydration | 2 |
| Improved packaging and grading units | 2 |
| Improved/quality seeds | 4 |
| Nurseries, to provide services and inputs | 5 |
| Access to local retail stores and modern super markets | 5 |
| Training and certification facilities | 6 |

Source: PRHA field exercise August, 2012

# Prioritized Constraints

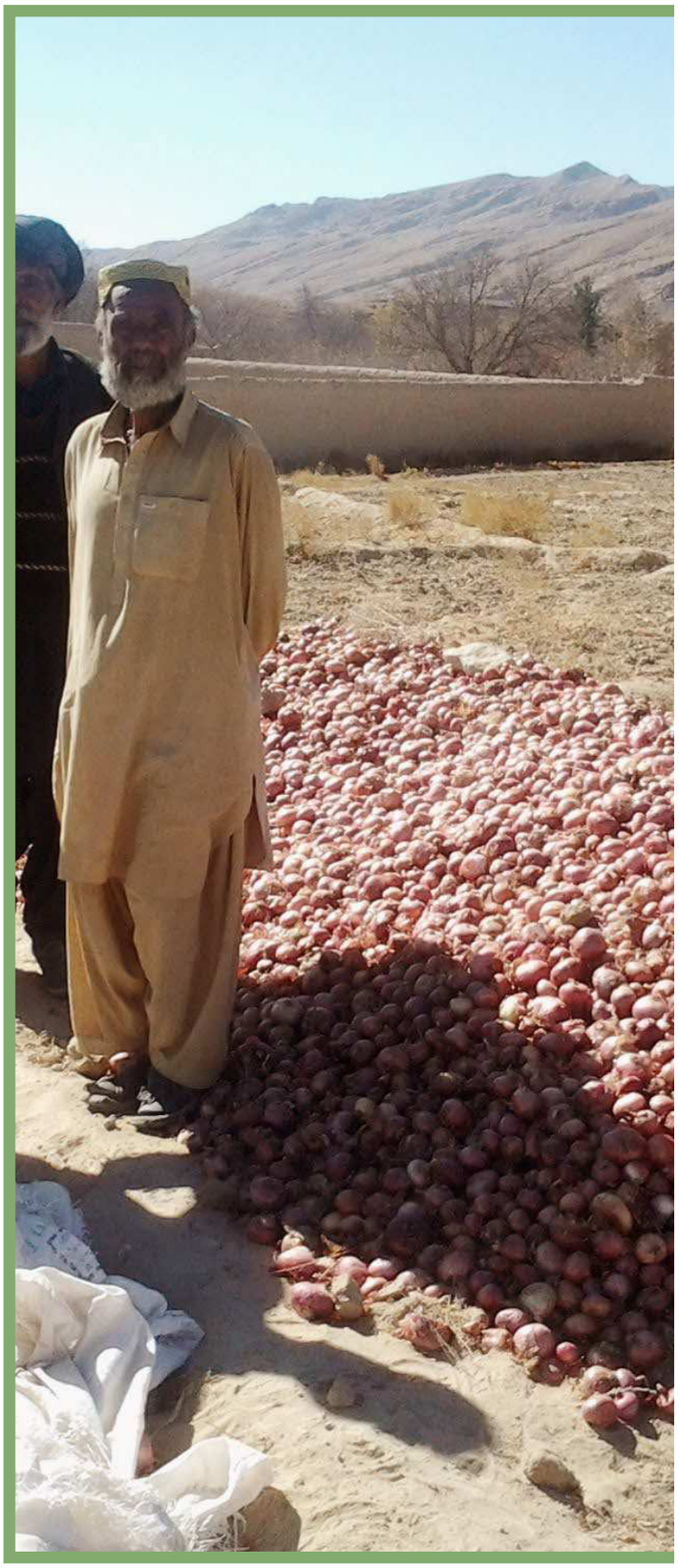
Constraints to vegetable value chains were also identified and prioritized by participants during the FGDs on the basis of their potential as high, medium or low. The list of the Priority constraints can be seen in the Table 10 below.

The key constraints hampering the development of vegetable sub-sector are listed in Table 10 below. Most constraints are cross-cutting and generic in nature relevant to the sub-sector in general. The high ranking constraints provide opportunities for investment which will not only generate income and employment but also act as drivers for the wider development of the sub-sector. However the key consideration for intervention in addressing the constraint should be private sector investors willing to partner with the project.

Table 10: Priority Constraints

| Prioritized constraints | Intensity |
|---|---|
| Scarcity of water resources | High |
| Limited access to international markets | High |
| High price of agriculture inputs | High |
| Unavailability of products specific fertilizers | High |
| Unavailability of processing and by products units | High |
| Market agent's monopoly in buying rates | High |
| No proper packing sheds | Medium |
| No proper storage facilities | Medium |
| Poor packaging | Medium |
| Limited availability of quality seeds | Medium |
| Unavailability of modern drying and processing techniques | Medium |
| Poor linkages with national markets | Medium |
| High cost of transportation | Medium |
| Lack of awareness and facilities about improved farming practices | Low |

Source: PRHA field exercise August, 2012



# State of the Services Provision

The availability and quality of business development services is important for the overall development of any sub-sector. The situation regard to services provision for both fruit and vegetables was appraised together with focus groups. In most cases the linkages between service providers and users were termed as weak to medium. To be effective in enhancing profitability of fruit growers, there is a need to build confidence and develop strong linkages of agribusiness with service providers. Table 11 below shows the state of the service providers and the kinds of the services provided by them in the region.

Table 11: State of the service provision

| Service Providers | Linkages | Paid/Free | Services Provided |
|---|---|---|---|
| **Agriculture Departments (Research, Extension, Water Management etc.)** | Weak | Free | Awareness, guidance and information regarding seeds and improved agriculture practices. |
| **Commercial Banks** | Medium | Paid | Finance, training and information |
| **Exporters** | Medium | | Collect the produce from the farm for local market (*mandi*) from farm gate. |
| **Farm Service Center** | Weak | Free | Training and information on improved farm practices |
| **Market Agents** | Medium to Strong | Cash & Credit | Marketing and fixing of prices and supply of inputs |
| | Strong | Credit | Financial support in purchase of inputs like fertilizers, pesticide etc. |
| **NGOs** | Weak | Free | Trainings and information, consultancy and timely supply of inputs on subsidized cash payment |
| **Private seed, agro-chemical, Packaging and fertilizer companies** | Strong | Cash | Provide inputs, timely supply of inputs on cash payment, awareness of the farmers |

Source: PRHA field exercise August, 2012

# State of Market Linkages

Marketing of fruits and vegetables varies from commodity to commodity; however, generally, most of the produce is channelled to local and country markets. Some of the national markets relevant for the regional producers include Karachi Sabzee Mandi, Hyderabad, Sanghar market, Tando Allahyar market, Mirpurkhas market. Demand for fruits and vegetables does exist in the international markets (particularly Gulf countries) but that needs to be tapped after overcoming several constraints related to export.

Marketing of fruits and vegetables is characterized by the presence of numerous intermediaries performing at various distribution stages, thus adding to marketing costs and directly affecting the price received by the farmer and paid by the consumer. The domestic market players include farmers, commission agents, contractors, wholesalers, inter-market traders and many other retailers. In general, intermediaries dominate the system and there is little direct market participation of the farmers, particularly small farmers.

The existing marketing operations are performed by traditional way such as, rough harvesting and handling methods, rudimentary grading, and poor quality packing, which reduce its marketability, leading to lower prices in the market. The non-availability of refrigerated lorries/trucks to transport vegetables and fruits from farm to distant markets increases the spoilage rate and reduces the bargaining position of the sellers.

Absence of enabling policies favouring growers (particularly small farmers), ineffective approaches towards improving and sustaining product quality, and lack of reliable updated market information also impede farmers' ability to take maximum benefits they deserve. Lack of market information system has increased the complexity of the marketing system on one hand and brought less return to the farmers on the other. Strengthening market information system can play vital role in increasing returns to the growers of fruits and vegetables, which can ultimately improve the living standard of the rural population and bring prosperity in the country. Exports are considered as a means of surplus disposal mainly channelled from the wholesale markets. Exports endeavours need to be supported by a "grow-for-export" strategy. Again, a well-established market information system can play vital role in this connection.

A crude estimate of Nominal Protection Coefficient (NPC) indicates that banana producers are getting very low price compared to export price, on the other hand mango growers are getting price close to international, carrying a much better incentive structure in comparison to other fruits under review. The low price or profits provide an opportunity to improve competitive advantage, meaning adopting good agriculture practices and marketing a better quality produce that compete and earn better income.

# Conclusion

The region represents a special case for opportunity and constraints to expand horticulture exports. The key constraints which are hampering the abilities of the sector include scarcity of water resources, lack of technological innovation, lack of support from the agriculture extension services department, very limited access to the modern retail stores / super markets, losses due to post harvesting mismanagement. Based on the PRHA, the following conclusions can be drawn;

- Among the fruits banana, mango and jojoba value chains represent potential in terms of volumes, value and diversity while other products can be promoted as niche market opportunities.

- Among the vegetables, priority is associated by growing onions and chilies whereas many different other vegetables can be produced as well. In vegetables chilies and onion is performing better in global markets.

- The top most prioritized value chain in fruits i.e Banana is not competing well in global markets because of unfavourable export policies for banana, poor pricing offered from international buyers and lack of attention being paid to the good quality's production. In vegetables chilies and onion is performing better in global markets.

- For fruit and vegetables, to develop in the region, it has to realize growth in volumes, however competition at domestic and world market would, in addition, need to invest in quality improvement.

- The productivity of fruits and vegetables well as post-harvest loses are of special mention to be addressed. Productivity gap for most commodities under review range from 85 to 95 percent. Relatively lower productivity and poor quality of the produce with no proper packaging and branding make Karachi region fruits and vegetable uncompetitive in export markets despite massive devaluation in the country's currency over the last four years. This also explains low or decreasing market share for horticulture crops in global markets. The post-harvest losses represent an opportunity to be taped on.

- Lack of post-harvest infrastructure (cool chain, pack houses, poor packagingetc.) and logistics for maintaining the quality of the highly perishable fruitsthat carriespoor physical market access, increasing input prices, poor coordination among stakeholders, lack of economies of scale and traditional practices are some of the constraint that impact the production of both fruit and vegetables.

# References

The secondary data in this report has been taken from and estimated based upon data given with the following sources:


1. Agriculture Statics of Pakistan
2. Ecnomics Survey of Pakistan
3. FAO Database
4. The Growth % rates:

4.1. Crops area and production (by districts) 2004-2005 to 2008-2009, Government of Pakistan, Ministry of Food, Agriculture and Livestock (MINFAL)

5. Share of commodity in World Production:

5.1. Crops area and production (by districts) 2004-2005 to 2008-2009, Governmnet of Pakistan, Ministry of Food, Agriculture and Livestock, (MINFAL)

5.2. Agriculture Statistics of Pakistan, 2009-2010 and previous publications

5.3. FAO Database 2012 accessed through internet

6. Region Share in national Production

6.1. Crops area and production (by districts) 2004-2005 to 2008-2009, Governmnet of Pakistan, Ministry of Food, Agriculture and Livestock (MINFAL)

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7.2. Agriculture Statistics of Pakisatn, 2009-2010 and previous publications

8. Productivity Gap

8.1. Crops area and production (by districts) 2004-2005 to 2008-2009, Government of Pakistan, Ministry of Food, Agriculture and Livestock (MINFAL)

8.2. FAO Database 2012 accessed through internet

9. Employment Intensity

   Potential for labor per acre calculated as percentage of labor days of wheat (ADB) plus index derived by PRHA results at field survey in the region and information gathered from various reports

10. Export Potential as Measured by Incentive Structure


FAO Database: The difference between export value of Pakistani produce and world export value (five years average)

(Annexures are available at Project Office, and can be provided upon request for reference)

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